

 **MOTOROLA SOLUTIONS**  
PROFESSIONAL DIGITAL TWO-WAY RADIO

**XT660d/XT665d**  
**FULL KEYPAD PORTABLE RADIO**

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**USER GUIDE**

en-US	nl-NL	sv-SE
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de-DE	pl-PL	uk-UA
es-ES	pt-PT	
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# Important Safety Information

RF Energy Exposure and Product Safety Guide for  
Portable Two-Way Radios



**CAUTION:**

**This radio is restricted to Occupational use only.**

Before using the radio, read the RF Energy Exposure and Product Safety Guide for Portable Two-Way Radios which contains important operating instructions for safe usage and RF energy awareness and control for Compliance with applicable standards and Regulations.

For a list of Motorola Solutions-approved batteries and other accessories, visit the following website:

<http://www.motorolasolutions.com>

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## Handling Precaution

XT600d Series Digital Portable radio meets IP55 specifications, allowing the radio to withstand adverse field conditions such as being used in rain or dusty environment.

- If the radio has been exposed to water or rain, shake the radio well to remove any water that may be trapped inside the speaker grille and microphone port. Trapped water in speaker grille and microphone port could cause decreased audio performance.
- If the radio's battery contact area has been exposed to water, clean and dry battery contacts on both the radio and the battery before attaching the battery to the radio. The residual water could short-circuit the radio.
- If the radio has been exposed to a corrosive substance (e.g. saltwater), rinse the radio and battery in fresh water then dry the radio and battery.
- To clean the exterior surfaces of the radio, use a diluted solution of mild dishwashing detergent and fresh water (i.e. one teaspoon of detergent to one gallon of water).
- When cleaning the radio, do not use a high pressure jet spray on the radio as this may cause water to leak into the radio.



### CAUTION:

Do not disassemble the radio. This could damage radio seals and result in leak paths into the radio. Radio maintenance should only be done in service depot that is equipped to test and replace the seal on the radio.

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# Introduction

This user guide covers the operation of your radios.

Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator for more information.

You can consult your dealer or system administrator about the following:

- Is your radio programmed with any preset conventional channels?
- Which buttons have been programmed to access other features?
- What optional accessories may suit your needs?
- What are the best radio usage practices for effective communication?
- What maintenance procedures that helps promote longer radio life?

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# Batteries and Chargers

## Safety Information

This document contains important safety and operating instructions. Read these instructions carefully and save them for future reference. Before using the battery charger, read all the instructions and cautionary markings on:

- the charger
  - the battery
  - the radio attached with battery
- 1** To reduce risk of injury, charge only the rechargeable Motorola Solutions-authorized batteries. Charging the other batteries may cause explosion, personal injury, and damage.
  - 2** Use of accessories not recommended by Motorola Solutions may result in fire, electric shock, or injury.
  - 3** To reduce damage to the electric plug and cord, pull by plug rather than the cord when disconnecting the charger.
  - 4** An extension cord should not be used unless necessary. Use of an improper extension cord may result in fire and electric shock. If an extension cord must be used, make sure that the cord size is 18 AWG

for lengths up to 100 ft (30.48 m), and 16 AWG for lengths up to 150 ft (45.72 m).

- 5** Do not operate the charger if it has been broken or damaged in any way. Take it to any qualified Motorola Solutions service representatives.
- 6** Do not disassemble the charger; it is not repairable and replacement parts are not available. Disassembly of the charger may result in risk of electrical shock or fire.
- 7** To reduce risk of electric shock, unplug the charger from the AC outlet before attempting any maintenance or cleaning.

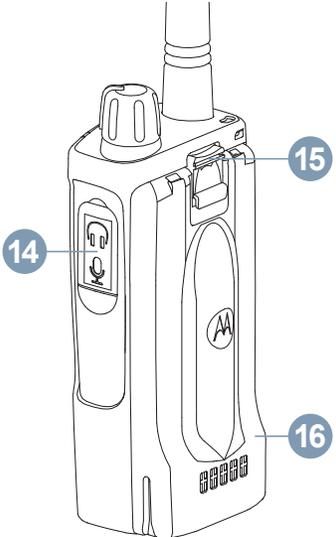
## Operational Safety Guidelines

- Turn off the radio while charging.
- The charger is not suitable for outdoor use. Use only in dry locations/conditions.
- Connect charger to an appropriately fused and wired supply of the correct voltage (as specified on the product only).
- Disconnect charger from line voltage by removing main plug.

- Connect the equipment to an outlet which is easy to access and near.
- For equipment using fuses, replacements must comply with the type and rating specified in the equipment instructions.
- Maximum ambient temperature around the power supply equipment must not exceed 40 °C (104 °F).
- Power output from the power supply unit must not exceed the ratings stated on the product label located at the bottom of the charger.
- Make sure the cord is not stepped on, tripped over, subjected to water, damage or stress.

# Radio Overview

This chapter explains the buttons and functions to control the radio.



## 1.1

## Control Buttons

The following table explains the functions of each buttons on the radio:

**Table 1: Control Buttons Reference Table**

Number	Description
1	<b>Antenna</b> For model XT660d/XT665d, the antenna is non-removable.
2	<b>Loop hole for strap</b>
3	<b>Recording Button</b> Press the button to toggle on off the recording transmission feature. See <a href="#">Recording on page 52</a> for more details.
4	<b>PTT Button</b> Press and hold to talk, release it to listen.
5, 6	<b>Side Button 1 (SB1), Side Button 2 (SB2)</b> See <a href="#">Table 2: Default Setting for SB1 and SB2 buttons on page 20</a> .
7	<b>On/Off/Volume Knob</b> Turns the radio on or off and to adjust the radio volume.
8	<b>LED</b>

*Table continued...*

Number	Description
	Shows battery status, power-up status, radio call information, and scan status.
9	<b>Speaker</b>
10	<b>Microphone</b> User has to speak clearly into the microphone when sending a message.
11	<b>LCD Display</b> Monochrome Display with Orange color backlight.
<b>Menu/OK and Navigation Buttons</b>	
	Press  to enter a menu or to confirm selection; press and hold to save the selection in the program mode.
12	Press  /  to toggle to the left/right of the selections available in the menu; press and hold to speed up the toggling.
	Press  to cancel and return to previous menu level; press and hold this button to return to Home screen.
<b>Alphanumeric Keypad</b>	
13	Press  for number zero; press and hold this button to change the text for numeric, characters and language selections. The top right corner on the radio screen shows ABC, abc, and 123 to indicate the characters you can key-in.

*Table continued...*

Number	Description
	Press  for space in the text; press and hold this button to lock or unlock all the control buttons except <b>PTT</b> button.
14	<b>Accessory Connector</b> Connects to compatible audio accessories.
15	<b>Battery Latch</b>
16	<b>Battery</b> XT600d Series comes with a Standard Capacity Li-Ion battery. Other batteries may be available. See <a href="#">Table 4: Motorola Solutions Authorized Batteries on page 28</a> for more details.

**Table 2: Default Setting for SB1 and SB2 buttons**

Buttons	Default Setting
Short Press <b>SB1</b>	Home Channel
Long Press <b>SB1</b>	Battery Level Announcement
Short Press <b>SB2</b>	Scan
Long Press <b>SB2</b>	Monitor

To describe how each presses function on a radio:

**Short press**

Press and release rapidly.

**Long press**

Press and hold for the programmed duration.

**Hold down**

Keep the button pressed.

**NOTICE:**

Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator to determine how your radio has been programmed.

## 1.2

**Radio Specifications**

The following table explains the radio specifications:

**Table 3: XT660d/XT665d Radio Specifications**

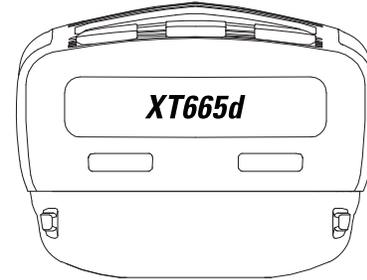
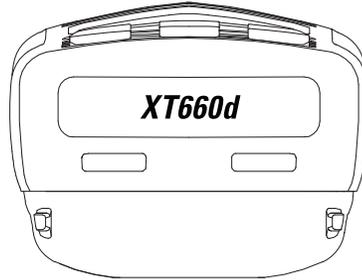
	XT660d	XT665d
Frequency Band (MHz)	PMR446, dPMR446	PMR446, dPMR446, LPD 433-434
Transmit Power (W)	0.5	0.5 for PMR446 and dPMR446, 0.01 for LPD
Number of Channels	128	128
Antenna	Non-removable	Non-removable

*Table continued...*

**XT660d**

**XT665d**

Model Label



# Batteries And Chargers

XT600d Series radios provide Lithium-Ion (Li-Ion) batteries which come in different capacities that defines battery life.

## 2.1

### About Li-Ion Battery

The XT600d Series radio comes with a rechargeable Li-Ion battery. This battery should be fully charged before initial use to ensure optimum capacity and performance.

Battery life is determined by several factors. The critical ones are overcharging of batteries and the average depth of discharge each cycle. Typically, the greater the overcharge and the deeper the average discharge, the fewer cycles a battery will last. For example, a battery which is overcharged and discharged 100% for several times a day, lasts fewer cycles than a battery that overcharges less and is discharged to 50% per day. Battery with minimal overcharge and has an average of 25% discharge, lasts even longer.

Motorola Solutions batteries are designed specifically to be used with a Motorola Solutions charger and vice versa. Charging batteries with non-Motorola Solutions equipment may lead to battery damage and void the battery warranty.

Whenever possible, maintain the battery temperature to 77 °F (25 °C) (room temperature). Charging a cold battery (below 50 °F [10 °C]) may result in leakage of electrolyte and ultimate failure of the battery. Charging a hot battery (above 95 °F [35 °C]) results in reducing discharge capacity and affecting the performance of the radio. Motorola Solutions rapid-rate battery chargers contain a temperature-sensing circuit to ensure that batteries are charged within the temperature limits stated above.

The following explains the duration for Li-Ion Battery life with TX Power 0.5 W during Battery Save On:

#### **Standard**

20 hr

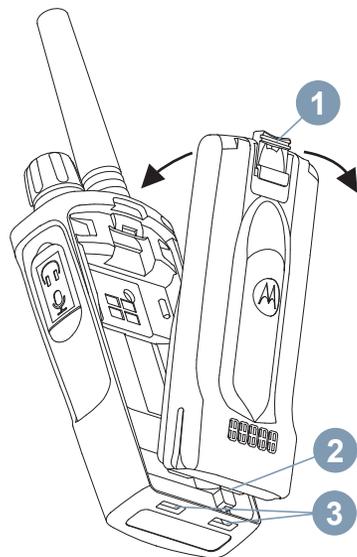
#### **Hi Cap Battery**

28 hr

## 2.2

### Installing Li-Ion Battery

The following steps explain how Li-Ion Battery is installed:



- 1 Turn the radio off.

---

- 2 With the Motorola Solutions logo facing up, fit the tabs (2) at the bottom of the battery into slots (3).

---

- 3 Press the battery latch (1) towards the radio until it snaps into place.

---

## 2.3

## Removing Li-Ion Battery

The following steps explain how Li-Ion Battery is removed:

- 1 Turn the radio off.

---

- 2 Push down and hold the battery latch.

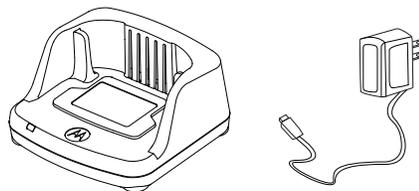
---

- 3 Pull the battery away from the radio.

---

## 2.4

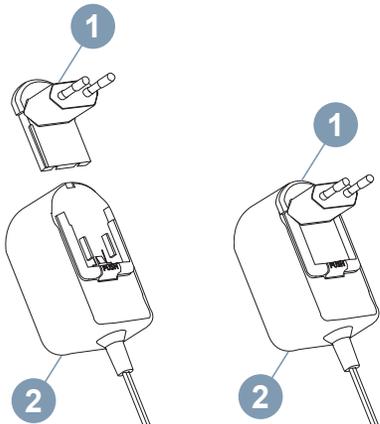
## Power Supply and Drop-in Tray Single Unit Charger (SUC)



Your radio comes with one Drop-in Tray SUC, one power supply (also known as Transformer), and a set of adaptors.

You can switch your power supply to suit the adaptors that come with your radio package. Use the adaptor of the region you are located at.

Perform the following actions to assemble and disassemble the power supply:



- Align the Adaptor (1) with the grooves of the Power Supply (2) until it snaps into place.
- To remove, slide the Adaptor (1) upwards.



**NOTICE:**

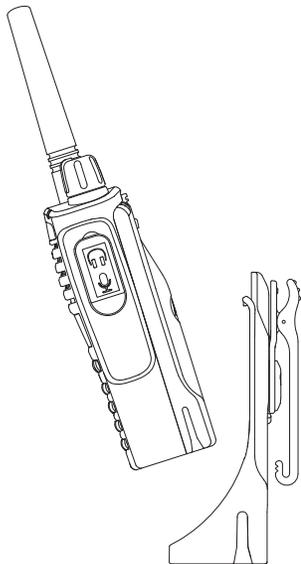
The adaptor shown in the pictures are for illustration purposes only. The adaptor you install may be different depending on region.

When acquiring additional Charger or power supply (2), make sure you have the similar Drop-in Tray SUC and power supply set.

## 2.5

### Holster

The following steps explain how to use a holster:



- 1 Insert the radio into the base of the holster. Press the radio against the back of the holster until the

hooks on the holster are inserted in the top recesses of the battery.

---

- 2 To remove, detach the hooks of the holster from the top recesses of the battery using the top tab on the holster. Slide the radio and remove from the holster.
- 

## 2.6

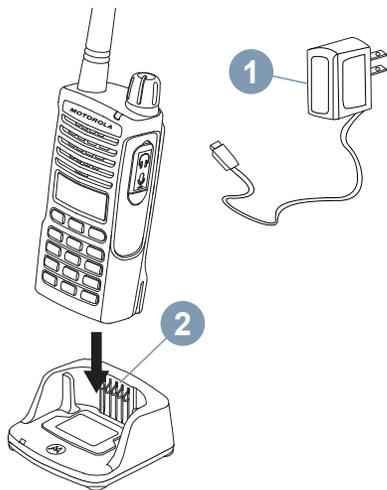
### Charging The Radio

With radio attached, place battery in a Motorola Solutions approved Drop-in Tray SUC or Multi-Unit Charger (MUC).

## 2.7

### Charging Radio with the Drop-in Tray SUC

The following steps explain how radio is charged using a Drop-in Tray SUC:



- 1 Place the charger on a flat surface.
- 2 Insert the connector of the Power Supply (1) into the port on the side of the Drop-in Tray SUC (2).

- 3 Insert the radio into the charger with the radio facing the front, as shown.



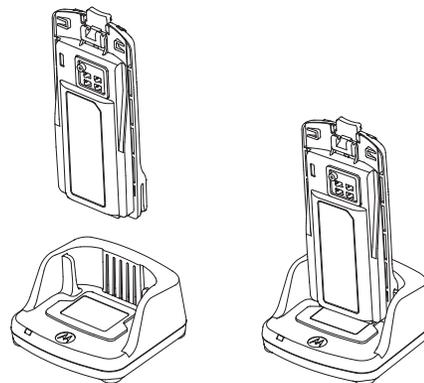
**NOTICE:**

When charging a battery attached to a radio, turn the radio off to ensure a full charge. See [Operational Safety Guidelines on page 15](#) for more information.

## 2.8

### Charging a Stand-Alone Battery

To charge only the battery, perform the following steps:



- 1 Perform [step 3](#) of "[Charging Radio with the Drop-in Tray SUC on page 26](#)".
- 2 Insert the battery into the tray, with the inside surface of the battery facing the front of the Drop-in Tray SUC.
- 3 Align the slots in the battery with the alignment ribs in the Drop-in Tray SUC.

**Table 4: Motorola Solutions Authorized Batteries**

Part Number	Description
PMNN4434_R	Standard Li-Ion Battery
PMNN4453_R	High Capacity Li-Ion Battery

## 2.9

## Drop-in Tray Charger LED Indicators

The following table explains the difference of each status and LED indicator:

**Table 5: Charger LED Indicator**

Status	LED Indicator	Comments
Power On	Green for approximately 1 second	-

Status	LED Indicator	Comments
Charging	Steady Red	-
Charging Complete	Steady Green	-
Battery Faulty	Red Fast Blink	Normally, re-positioning the battery pack will correct this issue.
Waiting to Charge	Amber Slow Blink	Battery temperature is too warm or too cold or wrong power voltage is being used.
	N/A	Battery empty
	Blink Red one time	Battery low
	Blink Amber two times	Battery medium
	Blink Green three times	Battery high
Battery Level Status		

*Table continued...*

If there is NO LED Indication:

- Check if the radio with battery, or the battery alone, is inserted correctly. (refer to [step 3](#) of "Charging Radio with the Drop-in Tray SUC on page 26")
- Ensure that the power supply cable is securely plugged into the charger socket using an appropriate AC outlet and there is power to the outlet.
- Confirm that the battery being used with the radio is listed in [Table 4: Motorola Solutions Authorized Batteries on page 28](#).

2.10  
**Battery Meter**

The battery meter located in the upper left corner of the radio display indicates how much battery power the radio has remaining.

**Table 6: Li-Ion Battery Meter**

Battery Meter		
3 Bars	2 Bars	1 Bar
		
100–70%	70–30%	35–0% (≤10% when blinking)

2.11  
**Estimated Charging Time**

The following provides the charging solutions with estimated charging time of the battery. For more information, see [Table 14: Battery on page 87](#).

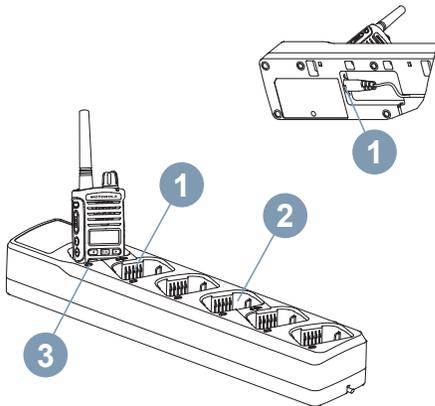
**Standard Battery**  
≤ 4.5 hr

**High Capacity Battery**  
≤ 4.5 hr

## 2.12

## Charging a Radio and Battery using a MUC - Optional Accessory

The MUC allows drop-in charging of up to six radios or batteries. Batteries can be charged with the radios or removed and placed in the MUC separately. Each of the six charging pockets can hold a radio (with or without the Holster) or battery, but not both at the same time.



1 Place the MUC on a flat surface.

---

2 Insert the power cord plug into the MUC's dual pin connector (1) at the bottom of the MUC.

---

3 Plug the power cord into an AC outlet.

---

4 Turn the radio off.

---

5 Insert the radio or battery into the charging pocket (3) with the radio or battery facing away from the contacts (2).

---

**NOTICE:**

- More information on the MUC's operation is available in the Instruction Sheets provided with the MUC. See [Accessories on page 87](#) for more information on the parts and their part numbers.
- See [Table 5: Charger LED Indicator on page 28](#) for more information on the MUC's LED Indicators (3).

## Getting Started

This section helps you to get familiar with the basic operation of the radio.

### 3.1

## Turning Radio On/Off

To turn the radio on, rotate the **On/Off/Volume** Knob clockwise. The radio plays one of the following:

- Power up tone and channel number announcement, or
- Battery level and channel number announcements, or
- Silent (Audible tones disabled).

The LED blinks solid red for 3 seconds.

To turn the radio off, rotate the **On/Off/Volume** Knob counterclockwise until you hear a 'click'.

### 3.2

## Adjusting Volume

Turn the **On/Off/Volume** Knob clockwise to increase the volume, or counterclockwise to decrease the volume.

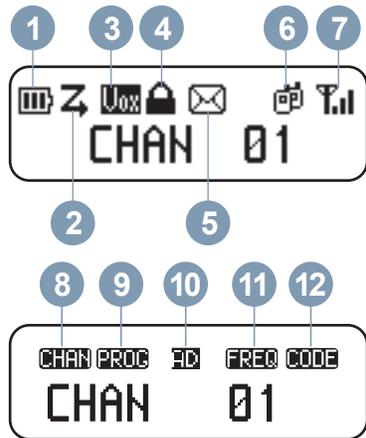


### NOTICE:

Do not hold the radio too close to your ear when the volume is high or while adjusting the volume.

### 3.3

## Radio Display



At the Home screen, the first line of the display shows different icons to indicate the status of different features. The second line are menu strings.

The following table describes the icons:

No.	Icon	Description
1.		The number of bars (0–3) shown indicates the charge remaining in the battery.
2.		Scan is enabled.
3.		VOX/iVOX is enabled. During activation, without VOX accessories, the radio is in iVOX mode, you can speak to the microphone without pressing <b>PTT</b> . When used together with VOX accessories, you can speak to accessories microphone without holding <b>PTT</b> from radio or accessories.
4.		<b>Keypad</b> and <b>Side</b> buttons are locked.
5.		The radio receives at least an unread text message.

*Table continued...*

No.	Icon	Description
6.i.		The radio is communicating in a Group Call.
6.ii.		The radio is communicating in a Private Call.
7.		This is Received Signal Strength Indicator. The number of bars (0–3) shown indicates the receiving signal strength.
8.		This indicates the current channel index.
9.		The radio is currently in programming mode.
10.i.		The current channel is in Analog mode.
10.ii.		The current channel is in Digital mode.
11.		This indicates the current channel frequency.
12.		This indicates the current CTCSS/DPL code.

**NOTICE:**

The radio display shown here is for icon location only. Each radio display may appear differently (channel and code) based on the pre-programmed features available for each model or region.

Pressing any button, except the **PTT** button, turns the backlight on.

## 3.4

## Selecting A Channel

Press  or  twice at Home screen to navigate to the next channel.

Each channel has its own Frequency, Interference Eliminator Code, and Scan Settings.

## 3.5

## Receiving A Call

The following steps explain how to receive call:

- 1 Release the **PTT** button and listen for voice activity.

- 2 To respond, hold the radio vertically 1 to 2 inches (2.5 to 5 cm) from mouth. Press the **PTT** button to talk; release it to listen.

The LED stays solid red when the radio is receiving or transmitting.

See [Making a Call from CONTACTS menu on page 44](#) to make a call.

## 3.6

## Signal Strength Indicator and Channel Busy Indicators

When there is an activity on a frequency, the Signal Strength Indicator icon (without bars) blinks and the radio LED stays solid orange. The radio Signal Strength Indicator

icon  can change from 1 (weakest) to 3 (strongest) depending on the radio reception coverage. When the radio is in receiving mode, the radio displays the Signal Strength Indicator icon with bars.

**NOTICE:**

Obstacles blocking the signal path may affect the incoming signal.

## 3.7

## Talk Range

XT600d Series radios have been designed to maximize performance and improve transmission range in the field. To avoid interference, it is recommended that the distance between radios is more than 1.5 m apart. The radio coverage is 16.250 m<sup>2</sup>, 13 floors, and 9 km in flat areas.

Talk range depends on the terrain. It will be affected by concrete structures, heavy foliage, and by operating radios indoors or in vehicles. Optimal range occurs in flat, open areas with up to 9 km of coverage. Medium range occurs when buildings and trees are in the way. Minimal range occurs when dense foliage and mountains obstruct the communication path.

## 3.8

## Radio LED Indicators

The following table explains the radio status and LED indication:

Radio Status	LED Indication
Power-Up	Shows solid red for 3 seconds.
Transmit (TX)/Receive (RX)	Shows solid red when the radio is transmitting or receiving.

*Table continued...*

To establish a proper two-way communication, the Channel, Frequency, and Interference Eliminator Codes must be the same on both radios. This depends on your radio pre-programmed profile:

### Channel

Current channel that the radio is using, depending upon radio model.

### Frequency

The frequency uses to transmit/receive.

### Interference Eliminator Code

These codes help minimize interference by providing a choice of code combinations.

Radio Status	LED Indication
'Idle' Programming Mode/Channel Mode	Blinking red in heartbeat pace.
Channel Busy	Shows solid orange.
Low Battery	Blinks orange in heartbeat pace.
Scanning	Blinking red in fast pace.
VOX/iVOX Mode	Blinking red in double heartbeats pace.
VOX/iVOX PTT	Shows solid red to indicate radio is transmitting.
Recording	Blinks red and green in heartbeat pace.
CPS Programming Mode	Blinking green in heartbeat pace.
Cloning Mode	Blinking double orange in heartbeats.
Cloning in Progress	Shows solid orange until cloning ends.
Firmware Flashing	Shows solid green when the radio is ready for flashing ; during flashing, the LED blinks green in fast pace, the LED turns off when data transfer is done and power-up radio with solid red for 3 seconds.

### 3.9

## VOX and iVOX

This chapter explains the setting up and the sensitivity adjustment of VOX/iVOX.

### VOX

VOX is only supported via VOX enabled accessories, VOX type headsets keep the microphone active all the time which radio will automatically transmit upon detecting signal without having user to press the **PTT** button on radio or audio accessory.

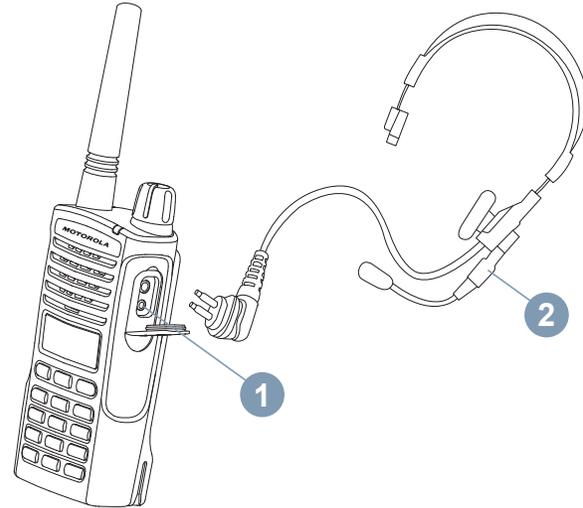
## iVOX

iVOX is only supported without audio accessories attach to radio. When iVOX is activated, radio microphone active all the time which radio will automatically transmit upon detecting signal without having user to press the **PTT** button.

### 3.9.1

## Setting up VOX

The following steps explain how to setup VOX:



- 1 Turn the radio off.

---

- 2 Open accessory cover.

---

- 3 Insert the audio accessory (2) plug firmly into accessory port (1).

---

- 4 Turn radio on.

The LED Indicator will blink double red.

---

- 5 Lower radio volume before placing accessory near ear.
- 

- 6 To transmit, speak into accessory microphone and to receive, stop talking.

VOX can be temporarily disabled by pressing the **PTT** button or by removing the audio accessory.

---



**NOTICE:**

Contact your Motorola Solutions point of purchase to order accessories.

### 3.9.2

## Setting up iVOX

The following steps explain how to setup iVOX:

- 1 Turn the radio off.
- 

- 2 Press and hold the **PTT** button while turning on the radio to enable iVOX.

The display shows **VOX**.

---



**NOTICE:**

Short press the **PTT** button temporarily disables iVOX. The display shows **VOX** blinking. Short press the **PTT** button again to re-enable iVOX.

There is a short delay between the time you start talking and when your radio transmits.

### 3.9.3

## Adjusting iVOX Sensitivity

The sensitivity of the radio's accessory or microphone can be adjusted to suit different operating environments. iVOX sensitivity can be programmed with Customer

Programming Software (CPS) or the  button.

Default value is **MEDIUM**. iVOX can be set to any value as listed below:

- 1 Press  and navigate to **SETTING**.
-

2 Press  and navigate to VOX LEVEL.

---

3 Press  and navigate to the suitable sensitivity level.

---

4 Press  to confirm on selection.

---



**NOTICE:**

The VOX levels ranges from LOW, MEDIUM to HIGH.

### 3.10

## Resetting to Factory Defaults

This feature sets all radio features back to the default settings.

Press **PTT**, **SB2**, and **SB1** simultaneously while turning on the radio until you hear a high tone chirp.

### 3.11

## Enabling or Disabling Beep Tone

The following steps explain how to enable and disable beep tone:

1 Press  and navigate to SETTING.

---

2 Press  and navigate to BEEP TONE.

---

3 Press  and navigate to ON/OFF.

---

4 Press  to turn the Beep Tone on or off .

---

### 3.12

## Locking or Unlocking Keypad

You can lock the keypad to avoid accidentally changing your radio settings. The following steps explain how to lock and unlock keypad:

1 Press and hold  for 4 seconds.

Lock icon  appears to indicate keypad and side buttons are locked.

---

2 Press and hold  for 4 seconds.

Lock icon  disappears, keypad and side buttons are accessible.

---



**NOTICE:**

The **PTT** button cannot be locked using this feature.

### 3.13

## Accessing Menu Options

The following steps explain how to access Menu options:

1 Short press  to access to Menu. The radio displays the feature options.

---

2 Press  or  to see the following features:

- SETTING
  - CHANNEL EDIT
  - CONTACTS
  - SCAN
  - MESSAGE
  - RECORDING
  - CALL LOG
  - ZONE
  - RADIO INFO
- 

3 Perform one of the following:

- To enter feature, press .
  - To exit, press .
- 



**NOTICE:**

The Menu mode times out automatically if there is no activity detected for more than 10 seconds. See [Advanced Features on page 41](#) for more information on the features.

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# Advanced Features

## 4.1 Setting

In the SETTING menu, there are a few items you are able to directly change the configuration on the radio without going through CPS. The following table explains the Settings and Options available:

Types of Setting	Options	Default Value
BACKLIGHT	ON/OFF	ON
VOICE ASSIST	<ul style="list-style-type: none"> <li>• OFF</li> <li>• ENGLISH</li> <li>• FRENCH</li> <li>• SPANISH</li> <li>• ITALIAN</li> <li>• RUSSIAN</li> </ul>	ENGLISH

*Table continued...*

Types of Setting	Options	Default Value
	<ul style="list-style-type: none"> <li>• DUTCH</li> <li>• PORTUGUESE</li> <li>• GERMAN</li> <li>• POLISH</li> <li>• TURKISH</li> </ul>	
VOX/iVOX	ON/OFF	ON
VOX LEVEL	LOW/MEDIUM/ HIGH	MEDIUM
BEEP TONE	ON/OFF	ON
TOT (PTT Time-Out-Timer)	OFF/60S/120S/ 180S	60S
Escalart Tone	ON/OFF	OFF

The following steps explain how to enter SETTING menu and make your configuration:

- 1 Press  and navigate to SETTING.

- 2 Press  and navigate across the list of selections available.
- 

- 3 Use , , or  to make your selection.
- 

## 4.2

### Channel Edit

Channel Edit is enabled using CPS. It provides a list of channels which the Channel Alias and Channel Frequency/Code can be edited through menu screen. Check with your dealer or system administrator for more information on this configuration.

#### 4.2.1

### Editing Channel Alias

The following steps explain how to edit channel alias:

- 1 Press  and navigate to CHANNEL EDIT.
- 
- 2 Press  and navigate to the required channel.
- 

- 3 When the display shows the required channel alias, press  and navigate to CHAN ALIAS.
- 

- 4 Press  and enter the required alphabets or numbers.
- 

- 5 Press  to confirm on selection.  
The radio displays COMPLETE.
- 

#### 4.2.2

### Editing Channel Frequency

The following steps explain how to edit channel frequency:

- 1 Press  and navigate to CHANNEL EDIT.
- 
- 2 Press  and navigate to the required channel.
- 
- 3 When the display shows the required channel name, press  and navigate to RX/TX EDIT.
-

4 Press  and navigate to FREQUENCY.

---

5 Press  and navigate through the list of frequencies to select.

---

6 Press  to confirm on selection.  
The radio displays COMPLETE.

---

### 4.2.3

## Editing Channel Code

The following steps explain how to edit channel code:

1 Press  and navigate to CHANNEL EDIT.

---

2 Press  and navigate to the required channel.

---

3 When the display shows the required channel name, press  and navigate to RX/TX EDIT.

---

4 Press  and navigate to PL/DPL.

---

5 Press  and enter the required numbers.

---

6 Press  to confirm on selection.  
The radio displays COMPLETE.

---

### 4.3

## Contacts

This chapter explains the different types of calls and ways of making call.

Through the CONTACTS menu, you are able to access to a list of contacts. With the contact list, you are able to make different types of call such as Group Call, Private Call, and All Call. Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator to determine how your radio has been programmed.

**Private Call**

A call from an individual radio to another individual radio. In order to make Private Call, your radio must be programmed to initiate a Private Call.

**Group Call**

A call within the pre-defined group. To make Group Call, your radio must be configured as part of that group.

**All Call**

A call that recipient can only receive but unable to response to it. To make All Call, the radio must be programmed to initiate all call.

## 4.3.1

**Making a Call from CONTACTS menu**

The following steps explain how to make a call from CONTACTS:

- 1 Press  and navigate to CONTACTS.

---

- 2 Use  or  to scroll across the list of selections available.

---

- 3 Once the radio displays the required Call ID, press the **PTT** button to make your call.
- 

## 4.3.2

**Features Available in Contacts**

Entering each contact ID from the Contact List allows user to perform on the following features. The following table shows the features available and description of each feature:

Features	Description
VIEW	View contact ID.
QUICK CONTACT	Set a current contact ID into Quick Contact.
CALL ALERT	Send Call Alert to the target radio.
RADIO CHECK	Initiate Radio Check request will allow user to determine if the target radio is active in a system with receive acknowledgment after request initiated.

*Table continued...*

Features	Description
REMOTE MON	Initiate Remote Monitor request will result in the target radio's microphone and transmitter activated to be remotely monitored.
RADIO ENA-BLE	Initiate Radio Enable command will enable a target radio that is disabled (inhibited).
RADIO DISA-BLE	Initiate Radio Disable command will disable the target radio from transmit and receive.
SEND MES-SAGE	Send new text or quick text message.
DELETE	Delete the contact ID.

### 4.3.3

## Adding New Contact to Contact List

The following steps explain how to add new contact to Contact List:

- 1 Press  and navigate to CONTACTS.

- 2 Use  or  to scroll to ADD NEW and press  to enter.

- 3 Enter the new radio ID numbers and press  to confirm the ID.

- 4 Enter the contact alias and press  to confirm the new name.

### 4.3.4

## Making Digital Call using One Touch Access

One Touch Access feature allows user to make a Group or Private Call to pre-defined ID conveniently, this feature can be configured with short or long press programmable buttons. Only one ID is allowed to assign for One Touch Access button at one time, however the radio can have multiple One Touch Access buttons programmed. Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator to determine how your radio has been programmed.

- 1 Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.

---

- 2 Press the side button that have been programmed with One Touch Access.  
The LED lights up in solid red.

---

- 3 Wait for the Talk Permit Tone to end (if enabled) and start speaking.

---

- 4 Press the **One Touch Access** programmed button again to end the transmission.

---

- 5 Within the call's hold time, press **PTT** button to reply on the ongoing call.

---

## 4.3.5

## Quick Contact

Quick Contact allows you to make a private call by pressing an assigned quick contact key.



### NOTICE:

This feature is only available in Digital Mode and it is applicable for group call and private call only.

## 4.3.5.1

## Editing Quick Contact

The following steps explain how to edit quick contact:

- 1 Press  and navigate to CONTACTS.

---

- 2 Use  or  to scroll across the list of selections.

---

- 3 Select the radio contacts and press .

---

- 4 Navigate to QUICK CONTACT and press .

---

- 5 Use  or  to scroll across the list of selections and select the number for Quick Contact.

---

- 6 Press  to confirm on selection.  
The radio displays a  to indicate activation is made.

---

## 4.3.5.2

## Making a Quick Contact Call

The following steps explain how to make a quick contact call:

- 1 At Home screen, press .

---

- 2 Press the number through the **Alphanumeric** keypad and press the **PTT** button to make a call.

---

## 4.4

## Scan

Scan allows you to monitor other channels to detect conversations. When the radio detects a transmission, it stops scanning and stays on the active channel. This allows user to listen and talk to other user on that channel without changing the channel. After the communication ends, the radio waits for 3 seconds before resuming scan.

## 4.4.1

### Select A Scan List

The following steps explain how to select a scan list:

- 1 Press  and navigate to **SCAN**.

---

- 2 Press  and use  or  to scroll through the Scan List.

---

- 3 Once the Scan List is selected, press .

---

- 4 Navigate to **SET ACTIVE**.

---

- 5 Press  to confirm on selection.  
The radio displays a  to indicate activation is made.

---




#### NOTICE:

Only one group is selected at a time to Scan.

## 4.4.2

### Selecting Priority Channel from a Scan List

The Priority Monitor feature allows the radio to automatically receive transmission from a member of a talkgroup with higher priority when it is in another call.

The following steps explain how to select priority channel from a scan list:

- 1 Press  and navigate to SCAN.

---

- 2 Press  and use  or  to scroll through the Scan List.

---

- 3 Once the Scan List is selected, press .

---

- 4 Navigate to CURRENT CHAN/other Channel Alias that are set in the Scan List and press .

---

- 5 Perform one of the following:
  - To enable priority, navigate to PRIORITY ON and press .
  - To disable priority, navigate to PRIORITY OFF and press .

---

#### 4.4.3

## Removing a Channel from a Scan List

The following steps explain how to remove a channel from a scan list:

- 1 Press  and navigate to SCAN.

---

- 2 Press  and use  or  to scroll through the Scan List.

---

- 3 Once the Scan List is selected, press .

---

- 4 Navigate to CURRENT CHAN/other Channel Alias that are set in the Scan List and press .

---

- 5 Navigate to DELETE and press .

---

- 6 Perform one of the following:
  - To delete, navigate to DELETE?.
  - To go back to previous screen, navigate to CANCEL?.

---

- 7 Press  to confirm on selection.

#### 4.4.4

### Adding a Channel to a Scan List

The following steps explain how to add a channel to a scan list:

- 1 Press  and navigate to `SCAN`.
- 2 Press  and use  or  to scroll through the Scan List.
- 3 Once the Scan List is selected, press .
- 4 Navigate to `ADD` and press .
- 5 Scroll through the Scan List and select the required Channel Alias.

- 6 Press  to confirm on selection.

The radio displays `COMPLETE`.

#### 4.5

### Message



#### NOTICE:

This feature is only available in Digital Mode.

XT600d Series supports Text Messaging Feature. The following table explains the selections and descriptions of Message:

Selections	Descriptions
NEW TEXT	Use Alphanumeric keypad to type the texts manually.
INBOX	Repository of received messages. User can forward or reply the messages here.
QUICK TEXT	Preset short text message for quick response.

*Table continued...*

Selections	Descriptions
SENT	Repository of sent messages. User can forward or reply the messages here.

## 4.5.1

## Creating New Text Message

The following steps explain how to create new text message:

- 1 Press  and navigate to MESSAGE.
- 2 Press  to enter the Message screen.
- 3 Navigate to NEW TEXT and press .
- 4 Use the **Alphanumeric** keypad to enter text message.

- 5 Press  to confirm on send.  
The radio displays a list of contacts in Contact List.

- 6 Scroll to the required contact and press  to send.  
The radio displays SENT.

## 4.5.2

## Replying, Forwarding or Deleting Received Message

The following steps explain how to reply, forward, or delete received message:

- 1 Press  and navigate to MESSAGE.
- 2 Press  to enter the Message screen.
- 3 Navigate to INBOX and press .

4 Scroll through the messages in the inbox. Press

 to select the following actions.

---

5 Perform one of the following:

- To create new text message to reply sender, navigate to QUICK REPLY and select NEW TEXT.
  - To select preset short phrases to reply sender, navigate to QUICK REPLY and select QUICK TEXT.
  - To forward a message to another contact in the Contact List, navigate to FORWARD.
  - To delete, navigate to DELETE?.
  - To go back to previous screen, navigate to CANCEL?.
  - To view on message, navigate to REVIEW.
- 

6 Press  to confirm on selection.

---

1 Press  and navigate to MESSAGE.

---

2 Press  to enter the Message screen.

---

3 Navigate to QUICK TEXT and press .

---

4 Scroll across the Quick Text List. Press  to select.

---

5 Press  to confirm on send.  
The radio displays a list of contacts in Contact List.

---

6 Scroll to the required contact and press  to send.  
The radio displays SENT.

---

### 4.5.3

## Sending Quick Text

The following steps explain how to send quick text:

## 4.5.4

## Forwarding or Deleting Sent Message

The following steps explain how to forward and delete sent message:

- 1 Press  and navigate to MESSAGE.

---

- 2 Press  to enter the Message screen.

---

- 3 Navigate to SENT and press .

---

- 4 Scroll across the Sent List and press  to select.

---

- 5 Perform one of the following:
  - To forward a message to another contact in the Contact List, navigate to FORWARD.
  - To delete, navigate to DELETE?.
  - To go back to previous screen, navigate to CANCEL?.
  - To view on message, navigate to REVIEW.

6

Press  to confirm on selection.

---

## 4.6

## Recording



### NOTICE:

This feature is only available in Digital Mode.

Once Voice Recording is activated, every conversation in the transmission will be recorded. The recording ends when the transmission ends. If the transmission is longer than 3 minutes, the next recording starts immediately after the previous record ends. This repeats until the transmission ends and the full recording time is 15 minutes.

## 4.6.1

## Initiate Recording

The following steps explain how to initiate recording:

- 1 Press  and navigate to RECORDING.

---

- 2 Press  to enter Recording screen.

---

- 3 Perform one of the following:
- To start recording, navigate to **START** and press  or press and hold the **Recording** button.
  - To stop recording, navigate to **STOP** and press  or press and hold the **Recording** button again.

The feature is in idle recording mode when there is no call. Whenever the radio detected a transmission, the recording mode record the conversation automatically.

#### 4.6.2

### Replaying or Deleting Recorded Files

- 1 Press  and navigate to **RECORDING**.
- 2 Press  to enter Recording screen.
- 3 Navigate to **RECORD FILES** and press .

- 4 Scroll through the list of record files and press  to select.

- 5 Perform one of the following:
  - To replay the recording, navigate to **PLAYBACK**.
  - To lock recorded files, navigate to **LOCKED**.
  - To delete, navigate to **DELETE?**.
  - To go back to previous screen, navigate to **CANCEL?**.

- 6 Press  to confirm on selection.

#### 4.6.3

### Checking Recording Time Left

- 1 Press  and navigate to **RECORDING**.
- 2 Press  to enter Recording screen.

- 3 Navigate to **TIME LEFT** and press . The radio display shows the minutes available for recording.
- 

## 4.7 Call Log

Call Log enables user to check the call history of the radio. The following steps explain how to access call log:



### NOTICE:

This feature is only available in Digital Mode.

- 1 Press  and navigate to **CALL LOG**.
  - 2 Press  to enter Call Log screen.
  - 3 Perform one of the following:
    - To view the list of incoming calls, navigate to **INCOMING**.
    - To view the list of outgoing calls, navigate to **OUTGOING**.
- 

### 4.7.1

## Saving Contact from Call Log to Contact List

The following steps explain how to save contact from call log to contact list:

- 1 Press  and navigate to **CALL LOG**.
  - 2 Press  to enter Call Log screen.
  - 3 Navigate to **INCOMING** to view the list of incoming call.
  - 4 Once found the required contact, press  to select.  
The radio displays **SAVE CONTACT**.
  - 5 Press  and use the **Alphanumeric** keypad to enter contact alias.
  - 6 Press  to save the details.
-

## 4.8

## Zone

A zone is a group of channels. There are four zones available and each zone consist of different channels. The following table shows the arrangement of the channels for each zone:

Zone	Channels
ALL ZONE (Default)	1–128
ZONE 1	1–32
ZONE 2	33–64
ZONE 3	65–96
ZONE 4	97–128

The following steps explain how to select a zone:

- 1 Press  and navigate to ZONE.
- 2 Press  and navigate across the list of zone.

3

Once the required zone is displayed, press  to select.

## 4.9

## Radio Information

Your radio contains information on various general parameters.

The following are the general information of the radio:

- Radio ID
- Radio Alias
- FW version

Use  and  or  to view information.

## 4.10

## Covert Mode

Covert Mode is enabled using CPS. Once radio is in Covert mode, the radio screen and LED are all off and speaker of the radio is muted. All communication and audio indicators shall go through accessories. **PTT** buttons and other control buttons function as usual. Check with your dealer or

system administrator for more information on this configuration.

## 4.10.1

### Activating Covert Mode

The following steps explain how to activate covert mode:

- 1 Press and hold  until a 'beep' tone is heard.
- 2 Press the four-digit passcode.
- 3 The radio screen is off.

## 4.10.2

### Deactivating Covert Mode

The following steps explain how to deactivate covert mode:

- 1 Press and hold  until a 'beep' tone is heard.
- 2 Press the four-digit passcode.
- 3 The radio screen is on.

## 4.11

### Break-In

Break-in allows user to transmit to another user that you want to talk to. Another user will receive it after the transmission is finished. This feature allows user to gain first priority in transmitting and block other user from transmitting.



#### NOTICE:

This feature is only available in Digital mode and is only applicable with Group Call.

The Break-in programmable button and duration of the break-in limited period is assigned by your dealer or system administrator. Check with your dealer or system administrator for more information on this configuration.

The following steps describes the behaviour of the break-in between radios:

- 1 During an ongoing group call, press the **Break-in** programmable button.
- 2 Once the ongoing group call is ended, radio that press the **Break-in** button displays **WAIT**, whereas the other radio displays **BREAK**.

- 3 Perform one of the following:
- To break-in successfully, press on the **PTT** button of the radio with **WAIT** on the display within 3 seconds, radio will display **COMPLETE!**.
  - To break-in successfully, press on the **PTT** button of the radio with **BREAK** on the display within 3 seconds, radio with **WAIT** display will turn to **COMPLETE!**.
  - To break-in unsuccessfully, do not press on any **PTT** button on any radio, wait for the break-in limited period to expire, radio with **WAIT** display will show **FAIL!**.

The duration of the break-in limited period can be programmed through CPS.

- 4 The other users whose transmission were broke-in have to wait for the TOT to expire before performing any transmission.

## Radio ID Direct Call

Direct call is a feature that enables radio to transmit call using the Radio ID. The following steps explain how to make direct call using radio ID:

- 1 At Home screen, press  .
- 2 Use the **Alphanumeric** keypad to enter the Radio ID.
- 3 Press on the **PTT** button to make a call.

### 4.13

## Reverse Burst



### NOTICE:

This feature is only available in Analogue Mode.

Reverse Burst eliminates unwanted noise (squellch tail) during loss of carrier detection. User is allow to select the value of the Reverse burst with the setting range of Off/ 120/180/240. The default value of Reverse Burst is 240.

- Some of the features available with the CPS software may vary depending on the radio model.

- Check with your dealer or system administrator for more information on this configuration.

### 4.14

## Silent Mode

Silent mode is enabled through CPS. Check with your dealer or system administrator for more information on this configuration.

There are three selections that can be programmed in CPS:

Selections	Description
OFF	Silent Mode is disabled.
Accessories audio only	Audio is route to headset instead of speaker of the radio when receiving calls.
No audio	Both speaker of radio and headset are muted.

## Setting up the Radio

This chapter explains how to set up the radio.

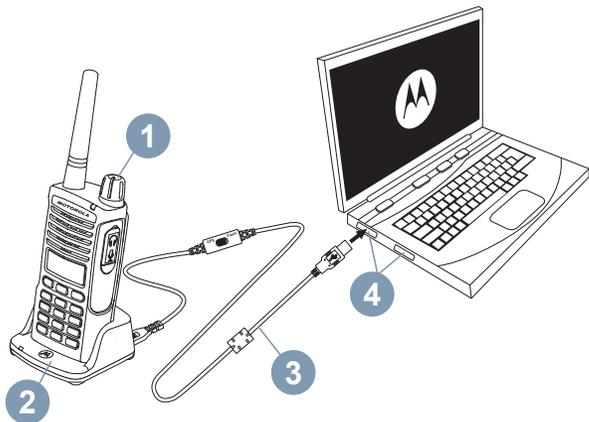


### NOTICE:

Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator to determine how your radio has been programmed.

### 5.1

## Setting up using CPS



**Figure 1: Setting up the radio using CPS**

To program, connect XT600d Series radio (1) using the Drop-in Tray SUC (2) and the CPS Programming Cable (3\*) to CPS in the computer (4) as shown in [Figure 1: Setting up the radio using CPS on page 59](#).

Toggle the cable switch of the CPS Programming Cable to 'CPS Mode'.

CPS allows you to program frequencies, PL/DPL Codes as well as other features such as: Break-in, Covert Mode, and

Silent Mode. CPS is a very useful tool as it can also lock the Front-Panel Radio Programming or restrict any specific radio feature to be changed (to avoid accidentally erasing the preset radio values). It also provides security by giving the option to set up a password for profile radio's management.

**NOTICE:**

(\*) CPS Programming Cable P/N# HKKN4027\_ is an accessory sold separately. Please contact your Motorola Solutions point of purchase for more information.

## 5.2

## Cloning Radios

You can clone XT600d Series radio profiles from one Source radio to a Target radio by using any one of these methods:

- Two SUC and a Radio-to-Radio (R2R) cloning cable
- CPS

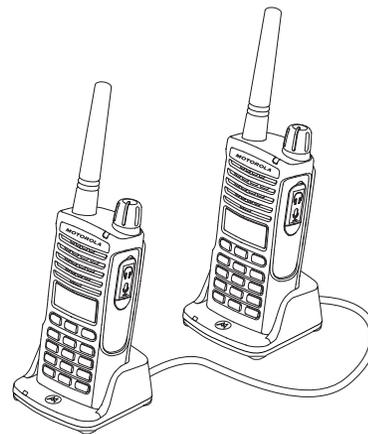
**NOTICE:**

Make sure the cable switch is in "Flash" or "CPS mode" position.

## 5.3

## Cloning Radio using the R2R Cloning Cable (Optional Accessory)

The following shows the types of cables used for R2R cloning:



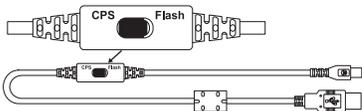


Figure 2: CPS Cable

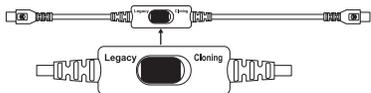


Figure 3: Cloning Cable



Figure 4: USB Converter

## 5.4

# Operating Instructions

The following steps explain the operating instructions of cloning radio using R2R:

- 1 Turn the radios off and prepare the following equipment:
  - A fully charged battery on each of the radios.
  - Two SUC for cloning XT600d Series radios.

- 2 Unplug all cables (power supply or USB cables) from the SUCs.

- 3 Connect the cloning cable with USB Converter, plug one side of the cloning cable's mini USB connector to the first SUC and the other side to the second SUC.



### NOTICE:

During the cloning process, no power is being applied to the SUC. The batteries will not be charged. Only data communication is being established between the two radios.

- 4 Turn the Target radio on and place it into one of the SUCs.

- 5 For the Source radio, turn the radio on with the following sequence:
  - a Long press the **PTT** button and the **SB2** button simultaneously while turning the radio on.
  - b Wait for 3 seconds before releasing the buttons and you hear a distinctive audible tone saying the word "Cloning".

- 6 Place the Source radio in the SUC. Press and release the **SB1** button.

---
- 7 When the cloning is completed, the Source radio audible voice will announce either “successful” or “fail”. If the Source radio is a display model radio, it will either show `Pass` or `Fail` on the display (a tone will be heard within 5 seconds).

---
- 8 Once the cloning process is completed, turn the radios off and on again to exit “Clone” mode.

---

## 5.5

### What To Do If Cloning Fails

The radio audible voice will announce “Fail” indicating that the cloning process has failed. In the event that the cloning fails, perform each of the following steps before attempting to start cloning process again:

- 1 Ensure that the batteries on both radios are fully charged.

---
- 2 Check the cloning cable connection on both SUCs.

---

- 3 Ensure that the battery is engaged properly on the radio.

---
- 4 Ensure that there is no debris in the charging tray or on the radio contacts.

---
- 5 Ensure that the Target radio is turned on.

---
- 6 Ensure that the Source radio is in cloning mode.

---
- 7 Ensure that the two radios are both from the same frequency band, same region and have the same transmission power.



#### **NOTICE:**

This cloning cable is designed to operate only with compatible Motorola Solutions SUC RLN6175 and PMLN6394.

---

When ordering Cloning Cable, please refer to P/N# HKKN4028\_. See [Accessories on page 87](#) for more information about the accessories.

# Troubleshooting

The following table explains the ways to troubleshoot if the symptom occurred:

6.1

## Symptom and Solutions

If...	Then...
<b>No Power</b>	Recharge or replace the Li-Ion battery. Extreme operating temperatures may affect battery life. See <a href="#">About Li-Ion Battery on page 23</a> .
<b>Hearing other noises or conversation on a channel</b>	Confirm Interference Eliminator Code is set. Frequency or Interference Eliminator Code may be in used. Change settings: either change frequencies or codes on all radios. Make sure radio is at the right frequency and code when transmitting.

If...	Then...
<b>Audio quality not good enough</b>	Radio settings might not be matching up correctly. Double check frequencies, codes, and bandwidths to make sure they are identical in all radios.
<b>Limited talk range</b>	<p>Steel and/or concrete structures, heavy foliage, buildings, or vehicles decrease range. Check for clear line of sight to improve transmission.</p> <p>Wearing radio close to body such as in a pocket or on a belt decreases range.</p> <p>Change location of radio. To increase range and coverage, you can reduce obstructions or increase power. UHF radios provides greater signal range and increased penetration through obstructions.</p> <p>See <a href="#">Talk Range on page 34</a>.</p>
<b>Message not transmitted or received</b>	<p>Make sure the <b>PTT</b> button is completely pressed when transmitting.</p> <p>Confirm that the radios have the same Channel, Frequency, and Interference Eliminator Code settings.</p> <p>Recharge, replace and/or reposition batteries. See <a href="#">About Li-Ion Battery on page 23</a>.</p>

If...	Then...
	Obstructions and operating indoors, or in vehicles, may interfere. Change locations. See <a href="#">Talk Range on page 34</a> .
<b>Heavy static or interference</b>	Radios are too close; they must be at least 5 ft apart. Radios are too far apart or obstacles are interfering with transmission. See <a href="#">Talk Range on page 34</a> .
<b>Low batteries</b>	Recharge or replace Li-Ion battery. Extreme operating temperatures affect battery life. See <a href="#">About Li-Ion Battery on page 23</a> .
<b>Drop-in Charger LED light does not blink</b>	Check that the radio/battery is properly inserted and check the battery/charger contacts to ensure that they are clean and charging pin is inserted correctly. See <a href="#">Charging The Radio on page 26</a> , <a href="#">Drop-in Tray Charger LED Indicators on page 28</a> and <a href="#">Installing Li-Ion Battery on page 23</a> .
<b>Low battery indicator is blinking although new batteries are inserted</b>	See <a href="#">Installing Li-Ion Battery on page 23</a> and <a href="#">About Li-Ion Battery on page 23</a> .
<b>Cannot activate VOX</b>	VOX feature might be set to off.

If...	Then...
	<p>Use the CPS to ensure that the VOX Sensitivity level is not set to '0'.</p> <p>Accessory not working or not compatible.</p> <p>See <a href="#">VOX and iVOX on page 35</a>.</p>
<b>Battery does not charge although it has been placed in the drop-in charger for a while</b>	<p>Check drop-in tray charger is properly connected and correspond to a compatible power supply.</p> <p>See <a href="#">Charging Radio with the Drop-in Tray SUC on page 26</a> and <a href="#">Charging a Stand-Alone Battery on page 27</a>.</p> <p>Check the charger's LEDs indicators to see if the battery has a problem. See <a href="#">Drop-in Tray Charger LED Indicators on page 28</a>.</p>

# Use and Care

This chapter shows the usage of using radio correctly:

7.1

## Precaution



Use a soft damp cloth to clean the exterior



Do not immerse in water



Do not use alcohol or cleaning solutions

### If the radio is submerged in water,



Turn radio off and remove batteries



Dry with soft cloth



Do not use radio until completely dry

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# Frequency and Code Chart

The following tables shows the Digital and Analogue frequency and code chart:

## 8.1

### Analogue Frequency and Code Charts

The charts in this section provide Frequency and Code information. These charts are useful when using the Motorola Solutions XT600d Series two-way radios with other business radios.

**Table 7: XT660d Default Channel Frequency and Interference Eliminator Code**

Zone	Channel Name	Frequency (MHz)	Codes
1	CHAN 01	446.00625	1-67.0 Hz
1	CHAN 02	446.01875	1-67.0 Hz
1	CHAN 03	446.03125	1-67.0 Hz
1	CHAN 04	446.04375	1-67.0 Hz
1	CHAN 05	446.05625	1-67.0 Hz
1	CHAN 06	446.06875	1-67.0 Hz
1	CHAN 07	446.08125	1-67.0 Hz
1	CHAN 08	446.09375	1-67.0 Hz

*Table continued...*

Zone	Channel Name	Frequency (MHz)	Codes
1	CHAN 09	446.00625	121-DPL 754
1	CHAN 10	446.01875	121-DPL 754
1	CHAN 11	446.03125	121-DPL 754
1	CHAN 12	446.04375	121-DPL 754
1	CHAN 13	446.05625	121-DPL 754
1	CHAN 14	446.06875	121-DPL 754
1	CHAN 15	446.08125	121-DPL 754
1	CHAN 16	446.09375	121-DPL 754

**Table 8: XT665d Default Channel Frequency and Interference Eliminator Code**

Zone	Channel Name	Frequency (MHz)	Codes
1	CHAN 01	446.00625	1-67.0 Hz
1	CHAN 02	446.01875	1-67.0 Hz
1	CHAN 03	446.03125	1-67.0 Hz
1	CHAN 04	446.04375	1-67.0 Hz
1	CHAN 05	446.05625	1-67.0 Hz

*Table continued...*

<b>Zone</b>	<b>Channel Name</b>	<b>Frequency (MHz)</b>	<b>Codes</b>
1	CHAN 06	446.06875	1-67.0 Hz
1	CHAN 07	446.08125	1-67.0 Hz
1	CHAN 08	446.09375	1-67.0 Hz
1	CHAN 09	433.07500	1-67.0 Hz
1	CHAN 10	433.30000	1-67.0 Hz
1	CHAN 11	433.55000	1-67.0 Hz
1	CHAN 12	433.80000	1-67.0 Hz
1	CHAN 13	434.05000	1-67.0 Hz
1	CHAN 14	434.30000	1-67.0 Hz
1	CHAN 15	434.55000	1-67.0 Hz
1	CHAN 16	434.77500	1-67.0 Hz

## 8.2

## Digital Frequency and Code Chart

The chart in this section provide Frequency and Code information. This chart is useful when using the Motorola Solutions XT600d Series two-way radios with other business radios.

**Table 9: XT660d Default Channel Frequency and Interference Eliminator Code**

Zone	Channel Name	Frequency (MHz)	Codes
1	CHAN 17	446.103125	Color code-1
1	CHAN 18	446.109375	Color code-2
1	CHAN 19	446.115625	Color code-3
1	CHAN 20	446.121875	Color code-4
1	CHAN 21	446.128125	Color code-5
1	CHAN 22	446.134375	Color code-6
1	CHAN 23	446.140625	Color code-7
1	CHAN 24	446.146875	Color code-8
1	CHAN 25	446.153125	Color code-9
1	CHAN 26	446.159375	Color code-10
1	CHAN 27	446.165625	Color code-11

*Table continued...*

Zone	Channel Name	Frequency (MHz)	Codes
1	CHAN 28	446.171875	Color code-12
1	CHAN 29	446.178125	Color code-13
1	CHAN 30	446.184375	Color code-14
1	CHAN 31	446.190625	Color code-15
1	CHAN 32	446.196875	Color code-16

**Table 10: XT665d Default Channel Frequency and Interference Eliminator Code**

Zone	Channel Name	Frequency (MHz)	Codes
1	CHAN 17	446.003125	Color code-1
1	CHAN 18	446.009375	Color code-2
1	CHAN 19	446.015625	Color code-3
1	CHAN 20	446.021875	Color code-4
1	CHAN 21	446.028175	Color code-5
1	CHAN 22	446.034375	Color code-6
1	CHAN 23	446.040625	Color code-7
1	CHAN 24	446.046875	Color code-8

*Table continued...*

Zone	Channel Name	Frequency (MHz)	Codes
1	CHAN 25	446.053125	Color code–9
1	CHAN 26	446.059375	Color code–10
1	CHAN 27	446.065625	Color code–11
1	CHAN 28	446.071875	Color code–12
1	CHAN 29	446.078125	Color code–13
1	CHAN 30	446.084375	Color code–14
1	CHAN 31	446.090625	Color code–15
1	CHAN 32	446.096875	Color code–16

## 8.3

## XT660d Full Frequency List


**WARNING:**

\*Only 446.0–446.1 MHz Analogue Frequencies are available by default. 446.1–446.2 MHz Analogue Frequencies should only be used in countries where these frequencies are allowed by government authorities. 446.1–446.2 MHz Analogue Frequencies are not allowed in Russia.

PMR446 Frequency (MHz)			
446.00625	446.05625	446.10625	446.15625

*Table continued...*

---

**PMR446 Frequency (MHz)**


---

446.01875	446.06875	446.11875	446.16875
446.03125	446.08125	446.13125	446.18125
446.04375	446.09375	446.14375	446.19375

---

**WARNING:**

\*446.0–446.1 MHz Digital Frequencies for XT660d is only available to be manufactured on or after January 2018.

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**dPMR446 Frequency (MHz)**


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*446.003125	*446.053125	446.103125	446.153125
*446.009375	*446.059375	446.109375	446.159375
*446.015625	*446.065625	446.115625	446.165625
*446.021875	*446.071875	446.121875	446.171875
*446.028125	*446.078125	446.128125	446.178125
*446.034375	*446.084375	446.134375	446.184375
*446.040625	*446.090625	446.140625	446.190625
*446.046875	*446.096875	446.146875	446.196875

---

## 8.4

**XT665d Full Frequency List**

<b>PMR446 Frequency (MHz)</b>			
446.00625	446.03125	446.05625	446.08125
446.01875	446.04375	446.06875	446.09375
<b>dPMR446 Frequency (MHz)</b>			
446.003125	446.028125	446.053125	446.078125
446.009375	446.034375	446.059375	446.084375
446.015625	446.040625	446.065625	446.090625
446.021875	446.046875	446.071875	446.096875
<b>LPD433 Frequency (MHz)</b>			
433.07500	433.52500	433.97500	434.42500
433.10000	433.55000	434.00000	434.45000
433.12500	433.57500	434.02500	434.47500
433.15000	433.60000	434.05000	434.50000

*Table continued...*

---

**LPD433 Frequency (MHz)**

---

433.17500	433.62500	434.07500	434.52500
433.20000	433.65000	434.10000	434.55000
433.22500	433.67500	434.12500	434.57500
433.25000	433.70000	434.15000	434.60000
433.27500	433.72500	434.17500	434.62500
433.30000	433.75000	434.20000	434.65000
433.32500	433.77500	434.22500	434.67500
433.35000	433.80000	434.25000	434.70000
433.37500	433.82500	434.27500	434.72500
433.40000	433.85000	434.30000	434.75000
433.42500	433.87500	434.32500	434.77500
433.45000	433.90000	434.35000	
433.47500	433.92500	434.37500	
433.50000	433.95000	434.40000	

---

## 8.5

**CTCSS And PL/DPL Codes****Table 11: CTCSS Codes**

<b>CTCSS</b>	<b>Hz</b>	<b>CTCSS</b>	<b>HZ</b>
1	67.0	21	136.5
2	71.9	22	141.3
3	74.4	23	146.2
4	77.0	24	151.4
5	79.7	25	156.7
6	82.5	26	162.2
7	85.4	27	167.9
8	88.5	28	173.8
9	91.5	29	179.9
10	94.8	30	186.2
11	97.4	31	192.8
12	100.0	32	203.5
13	103.5	33	210.7

*Table continued...*

CTCSS	Hz	CTCSS	HZ
14	107.2	34	218.1
15	110.9	35	225.7
16	114.8	36	233.6
17	118.8	37	241.8
18	123.0	38	250.3
19	127.3	122 (*)	69.3
20	131.8		

Table 12: PL/DPL Codes

DPL	Code	DPL	Code	DPL	Code
39	23	99	503	160	Inverted DPL 69
40	25	100	506	161	Inverted DPL 70
41	26	101	516	162	Inverted DPL 71
42	31	102	532	163	Inverted DPL 72
43	32	103	546	164	Inverted DPL 73
44	43	104	565	165	Inverted DPL 74

Table continued...

<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>
45	47	105	606	166	Inverted DPL 75
46	51	106	612	167	Inverted DPL 76
47	54	107	624	168	Inverted DPL 77
48	65	108	627	169	Inverted DPL 78
49	71	109	631	170	Inverted DPL 79
50	72	110	632	171	Inverted DPL 80
51	73	111	654	172	Inverted DPL 81
52	74	112	662	173	Inverted DPL 82
53	114	113	664	174	Inverted DPL 83
54	115	114	703	175	Inverted DPL 84
55	116	115	712	176	Inverted DPL 85
56	125	116	723	177	Inverted DPL 86
57	131	117	731	178	Inverted DPL 87
58	132	118	732	179	Inverted DPL 88
59	134	119	734	180	Inverted DPL 89
60	143	120	743	181	Inverted DPL 90

*Table continued...*

<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>
61	152	121	754	182	Inverted DPL 91
62	155	123	645	183	Inverted DPL 92
63	156	124	Customized PL	184	Inverted DPL 93
64	162	125	Customized PL	185	Inverted DPL 94
65	165	126	Customized PL	186	Inverted DPL 95
66	172	127	Customized PL	187	Inverted DPL 96
67	174	128	Customized PL	188	Inverted DPL 97
68	205	129	Customized PL	189	Inverted DPL 98
69	223	130	Inverted DPL 39	190	Inverted DPL 99
70	226	131	Inverted DPL 40	191	Inverted DPL 100
71	243	132	Inverted DPL 41	192	Inverted DPL 101
72	244	133	Inverted DPL 42	193	Inverted DPL 102
73	245	134	Inverted DPL 43	194	Inverted DPL 103
74	251	135	Inverted DPL 44	195	Inverted DPL 104
75	261	136	Inverted DPL 45	196	Inverted DPL 105
76	263	137	Inverted DPL 46	197	Inverted DPL 106

*Table continued...*

<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>
77	265	138	Inverted DPL 47	198	Inverted DPL 107
78	271	139	Inverted DPL 48	199	Inverted DPL 108
79	306	140	Inverted DPL 49	200	Inverted DPL 109
80	311	141	Inverted DPL 50	201	Inverted DPL 110
81	315	142	Inverted DPL 51	202	Inverted DPL 111
82	331	143	Inverted DPL 52	203	Inverted DPL 112
83	343	144	Inverted DPL 53	204	Inverted DPL 113
84	346	145	Inverted DPL 54	205	Inverted DPL 114
85	351	146	Inverted DPL 55	206	Inverted DPL 115
86	364	147	Inverted DPL 56	207	Inverted DPL 116
87	365	148	Inverted DPL 57	208	Inverted DPL 117
88	371	149	Inverted DPL 58	209	Inverted DPL 118
89	411	150	Inverted DPL 59	210	Inverted DPL 119
90	412	151	Inverted DPL 60	211	Inverted DPL 120
91	413	152	Inverted DPL 61	212	Inverted DPL 121
92	423	153	Inverted DPL 62	213	Inverted DPL 122

*Table continued...*

<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>	<b>DPL</b>	<b>Code</b>
93	431	154	Inverted DPL 63	214	Inverted DPL 123
94	432	155	Inverted DPL 64	215	Customized DPL
95	445	156	Inverted DPL 65	216	Customized DPL
96	464	157	Inverted DPL 66	217	Customized DPL
97	465	158	Inverted DPL 67	218	Customized DPL
98	466	159	Inverted DPL 68	219	Customized DPL

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# Motorola Solutions Limited Warranty

## A.1 What is Not Covered By the Warranty

- Defects or damage resulting from use of the Product in other than its normal and customary manner or by not following the instructions in this user guide.
- Defects or damage from misuse, accident or neglect.
- Defects of damage from improper testing, operation, maintenance, adjustment or any alteration or modification of any kind.
- Breakage or damage to aerials unless caused directly by defects in material or workmanship.
- Products disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim.
- Defects or damage due to moisture, liquid or spills.
- All plastic surfaces and all other externally exposed parts that are scratched or damaged due to normal use.

- Products rented on a temporary basis.
- Periodic maintenance and repair or replacement of parts due to normal usage, wear and tear.

## A.2 Warranty Information

The authorised Motorola Solutions dealer or retailer where you purchased your Motorola Solutions two-way radio and/or original accessories will honour a warranty claim and/or provide warranty service. Please return your radio to your dealer or retailer to claim your warranty service. Do not return your radio to Motorola Solutions. To be eligible to receive warranty service, you must present your receipt of purchase or a comparable substitute proof of purchase bearing the date of purchase. The two-way radio should also clearly display the serial number. The warranty will not apply if the type or serial numbers on the product have been altered, deleted, removed or made illegible.

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## Accessories

**Table 13: Audio Accessories**

Part No.	Description
HKLN4601_	Surveillance kit with in-line microphone and PTT
HKLN4599_	D-Style Earpiece with in-line microphone and PTT
HKLN4604_	Swivel Earpiece with in-line microphone and PTT
HKLN4606_	Remote speaker microphone with PTT
HKLN4605_	Earbud with in-line microphone and PTT

**Table 14: Battery**

Part No.	Description
PMNN4434_	Standard Li-Ion Battery
PMNN4453_	High Capacity Li-Ion Battery

**Table 15: Cables**

Part No.	Description
HKKN4028_	Radio to Radio Cloning Cable
HKKN4027_	CPS Programming Cable

**Table 16: Chargers**

Part No.	Description
PMLN6383_	SUC Charging Tray
25012026001	100-240 V, 7.5 W, Universal, Micro-USB, Switch Mode Power Supply
58012029006	110-240 V, UK/HK Charger Switch Power Supply
58012029004	110-240 V, Europe Charger Switch Mode Power Supply
PMLN6385_	Standard Drop-In Tray SUC UK/EU Kit

**Table 17: Carry Accessories**

Part No.	Description
PMLN7655_	XT600d Series Carry Holster
PMLN7709_	XT600d Series Leather Carry Case

**NOTICE:**

Certain accessories may or may not be available at the time of purchase. Please contact your Motorola Solutions Point of Purchase or visit <http://www.motorolasolutions.com> for latest information on accessories availability and new accessories models.



[www.motorolasolutions.com/](http://www.motorolasolutions.com/)

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